

Expanding the Role of Educators in Science Museums

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Abstract

*In 2007 the word "education" made its way to first place in the list of museum goals published by the International Council of Museums (ICOM). As someone who began museum work as an educator some thirty years ago, I am happy to see education and its attendant goals of public service and community engagement receive acknowledgement in the international museum community. At the same time I am concerned both about the way that education has been defined and perceived in museums and subsequently about the role that museum educators play. This article is based on my 30 years of experience working in and with museums, especially science centers, in the United States; my visits to some dozen museums and science centers in India during my NCSM-sponsored travels in 2009 and 2011; and reflections from my blog, *Museum Commons*, which I began writing in June 2011.*

Education and the Public Dimension: A Brief History

The International Stage

Since its creation in 1946, ICOM has repeatedly revised its definition of the word "museum." A close examination of these definitions on the ICOM website¹ provides a thumbnail sketch of changes not only in museums but in world culture, e.g. references to "man" become references to "humanity," and "collections" have become "tangible and intangible heritage." The following three ICOM definitions illustrate the growing perception of museums as institutions created for education and service to society:

1946: The word "museum" includes all collections open to the public, of artistic, technical, scientific, historical or archaeological material, including zoos and botanical gardens, but excluding libraries, except in so far as they maintain permanent exhibition rooms.

1974: A museum (science centres, planetaria, etc. were added in a lengthy addendum to this definition) is a non-profit making, permanent institution in the service of the society and its development, and open to the public, which acquires, conserves, researches, communicates, and exhibits, for purposes of study, education and enjoyment, material evidence of man and his environment. (Here we see that "education" appears, along with "study" and "enjoyment" as one of the main purposes of a museum.)

2007: A museum is a non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment. (Here "education" attains first place.)

In American Museums

The use of the term "public dimension" with its focus on education as a primary aim of museums came into its own in the United States with the American Association of Museum's publication in 1992 of *Excellence and Equity: Education and the Public Dimension of Museums*². This report, created by a commission of leading American museum directors, educators, and curators, is considered a landmark document, and has had an enormous impact on American museums of all types – history, art, and science. A quick online search of American museum mission statements reveals words such as *educate, encourage learning or appreciation, inspire, public service, public, community*; all larger museums today have education departments, and even very small museums often count as part of their essential staff an educator as well as a curator or conservator. The recommendations of *Excellence and Equity* regarding the role that museums should play in education and public engagement were guaranteed sustainability when AAM began to include a "Public Dimension" section in its criteria for museum accreditation and re-accreditation. Any museum seeking the stamp of AAM on its mission and work must meet a range of standards that include not only management and collections criteria, but a commitment in staff, budget, and programming to "the public dimension."

Why the Concern?

Education and the concept of the public dimension seem to be almost everywhere in museum discourse and museum practice. With all of this affirmation of the educational role of museums, why then am I concerned?

Concern 1: Importing a Classroom Mentality

I have been thinking for some time about museums' propensity to imitate and reinforce the environments and methods of formal education in the roles they assign educators and in the ways they apply education in

their work. For a variety of reasons, the acknowledgement of education's primary role in the work of museums has led to a narrower and narrower definition of the word "education." One reason may be that people generally tend to equate education with schooling. Another may be that many education staff in museums come from the formal education sector, are comfortable with its perspectives and methodologies, and have transferred them into the museum world without much modification. Finally, the collaboration of schools and museums certainly brings both tangible and intangible benefits – funding for museums and curriculum enrichment for schools. In particular because of these mutually beneficial relationships, I do not think that museums should abandon their school constituents. I do, however, advocate a closer look at the broader question of museum learning, which can include but should not be limited to links with the world of formal education.

Despite their classrooms, museum teachers, and programs for students, museums are not at their roots alternative schools. They are specially designed spaces that encourage engagement with three dimensional objects and/or activities; that move people through time and space; that involve graphic design, lighting, staging, and social interaction. If anything museums are more like the theater than they are like schools, but that is another discussion.

Impact of Narrow View of Education on Role of Education Staff in Museums

As a consequence of this linking of museum education almost exclusively with service to schools and students, the role of museum educators is very narrowly focused in many museums. Certainly this is true in the United States, and I suspect it is the same in India. The work of educators consists in the development of training and materials that will educate teachers about the museum and its offerings and enhance school visits. Although many museums now include educators on exhibition development teams, their role is often limited to the creation of programs and materials that will enhance visitor and school experiences. Their primary responsibilities are fulfilled after the exhibition is conceived and developed, and their participation in the creation of the exhibition itself is minimal. While theirs is not an insignificant or unimportant role, it does raise questions about why, if museums are primarily learning institutions, educators might not also contribute to museums' primary mode of communication – the exhibition. My sense is that in most museums with curators, it is the curators who still make major decisions about the content and format of exhibitions and about the overall vision of

the museum. And in museums without curators, such as many American science centers, it is the exhibit department that is the most influential in shaping the overall direction of the museum.

Thus it is important to acknowledge the persistent secondary status of education staff in most museums. Granted there are some exceptions, but in most museums people with this type of expertise may head an Education Department; they are not necessarily part of top management. They have input, sometimes considerable input, but do not ultimately control the direction of the museum. How many have final control over museum resources – funding, staff, space, and time? How many make the final decisions about the distribution and use of these resources? How many have a major impact on Board decisions? On the direction of new fund-raising? I don't mean to belittle the successes that my fellow museum educators have achieved in advocating for the public dimension over the years. But, as one experienced colleague put it when I discussed this topic with her – "[museum educators] have changed the identity of museums, but perhaps have not gained power."

Why the Secondary Status?

Among the causes for this secondary status:

- * In the long history of museums, educators are relative newcomers. Curators have been a part of museum structure almost since their inception. Despite education moving to the forefront of museum goals, as discussed above, the internal structures of most museums remain the same. Education Departments have been added, but their directors and most especially their staff, do not have a place in the hierarchy that is parallel to curators, even when the educators have higher degrees comparable to those of curators. Some museums have made an attempt to change this by calling their Director of Education the "Curator of Education," but these are few and far between.
- * It must also be acknowledged that the museum world is still a male-dominated one – except in the area of education. In the United States, at least, most Education Departments are headed and staffed by women. But if one looks at statistics on museum directors and senior administrators, the numbers show that they are overwhelmingly male." In my view gender bias is still alive and well in the museum world.
- * The narrow concentration of museum education departments on work with schools instead of on exhibitions, the central focus of most museums

and their *raison d'être*, also undermines their recognition as essential to the central work of the museum. This is discussed at greater length elsewhere in this paper.

My view is that in absence of a widening of their purview, museum educators will continue to have great difficulty in effecting a pervasive and fundamental impact on the institutions in which they work. And most of our museums, exhibitions, and programs will continue to look and operate pretty much the same as they always have.

Looking at Learning Rather than Education

A simple shift from the word “education” to the more active term, “learning,” may help to widen our perspective. Certainly the current research on experiences both in schools and in museums focuses on learning. I have found a number of publications by the National Research Council (NRC) of the National Academies of Science in the United States to be useful in exploring this broader concept of learning, especially as it is understood in museums. These publications are available free online.

Distinction between Formal and Informal Learning

Distinctions between formal and informal^{vi} learning are not helpful, and may be misleading. *How People Learn* by cognitive scientist John Bransford and colleagues^{vii} provides a compendium of recent scholarship on learning. The studies discussed by Bransford confirm that the experience of learning is essentially the same, neurologically, psychologically, and cognitively, in both formal and informal settings. Whether in a classroom, a park, a kitchen, or a museum, the process, as it happens in the brain, is the same. The neurons are firing, the synapses are connecting, and change (learning) occurs. Bransford says that all learning is transfer; it is change – we gain new information, or expertise, or skills. The conditions that promote learning are also the same, whether in a formal or informal environment. We learn best when we can relate something new to what we already know. Learning is enhanced (or inhibited) by context, by prior knowledge, by communication with others, by discussion and scaffolding. The distinction that is often made by museum professionals regarding formal and informal learning/education is not a useful one; it is the environments (classroom or kitchen) in which we learn, and the methods (testing, memorizing, tasting, touching, etc.) we use, that are formal or informal, not

the learning process itself. This distinction, I think, may help in re-imagining the role of science museum educators, who should be viewed as the experts when it comes to developing learning experiences for visitors in informal settings.

Museums as Intentionally Designed Spaces

A second NRC publication, *Learning Science in Informal Environments*^{viii} is a useful companion to Bransford. The report, published in 2009, summarizes and organizes current research on learning science in informal settings, including museums. Chapter 5, “Science Learning in Designed Settings,” describes museums as environments that are “intentionally designed for learning about science and the physical and natural world.”^{ix} The report goes on to give examples of intentionally designed spaces for science learning – science museums and centers, aquariums, zoos, environmental centers and their designed components. Using an array of current research, *Learning Science in Informal Environments* describes the kinds of experience visitors can have in settings designed for science learning. These range from the concrete – new understanding of a scientific concept, for example – to the more abstract – excitement and enthusiasm about science and the natural world; personal meaning-making; a reinforced sense of identity; a more spiritual connection with nature.

In its discussion of museums as intentionally designed spaces the report observes that “science exhibit design can be both a form of interpretation and a catalyst for science learning.” Exhibits that encourage science learning should:

- be shaped by intentional design & personal interpretation (prior knowledge);
- stimulate excitement, interest & comfort;
- feature direct experience and direct access to phenomena;
- model scientific processes through interactivity; doing and seeing; meaning making and explanation (stimulate prior knowledge); questioning and predicting; self-reflection on learning;
- be designed to encourage adult-child interaction.

Museum Educators as Experts in Developing Informal Spaces for Science Learning

It is in this broader rethinking of learning in museums that I see museum educators have an important role. If we think of science exhibitions as intentionally designed

informal spaces for science learning (very different from the classroom or laboratory formal spaces for science learning) then museum educators, experts in human learning, should move to an important role in the design of exhibitions. Curators are still vitally important in the research and contribution of content; exhibit designers are also essential for their technical knowledge of the manipulation of museum space; but educators are equally necessary in order to inform and shape the ways that content and design come together to enhance engagement not only by students but by the visitors of all ages who come to museums, usually in multigenerational groups.

The following are some specific ways in which museum educators can make significant contributions to the design of informal spaces in science museums.

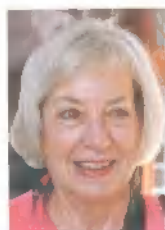
- Museum educators know visitors well and are at ease in working with them on the museum floor. Working with curators and exhibit designers, they can *design and conduct formative evaluation for potential exhibition projects* – observing and interviewing visitors in order to ascertain what they do and do not understand about concepts and terms under consideration for an exhibition.
- Once formative evaluation is completed, *educators can analyze the findings and use them to advise curators and exhibit designers on ways of displaying science concepts* so they can be understood by the broadest range of visitors.
- Museum educators are trained in a *developmental understanding of learning*, i.e. they know through both training and experience that people of different ages have different levels of skill and ability. Educators are used to adapting difficult material to differing age groups for maximum understanding. They *should be involved in writing or at least reviewing label copy that is developmentally appropriate* and accessible to children, adults, and family groups.
- Museum educators can also contribute to exhibition development *by working with the exhibit designer to organize and conduct prototyping* of exhibit designs and components with visitors on the museum floor.
- Museum educators *can be trained to conduct more sophisticated forms of visitor research, thus benefiting the museum in its future planning.*

Conclusion

Educators, despite their universally acknowledged key role in the essential work of museums, are an under-used and under-appreciated resource in science centers and museums. Directors and administrators should expand and foster through training the involvement of educators in all aspects of their institutional mission and not simply in the organization and conduct of school programs. Educators should be involved in the important work of exhibition assessment and development and more broadly in planning for the future of their institutions.

Notes

- (i) Museum Commons. <http://museumcommons.blogspot.com/>
- (ii) Development of the Museum Definition according to ICOM Statutes (2007-1946). Retrieved February 19, 2011 from http://archives.icom.museum/hist_def_eng.html
- (iii) American Association of Museums. (1992). *Excellence and Equity: Education and the Public Dimension of Museums*. Washington, DC: American Association of Museums.
- (iv) Norris, L. (Nov. 3, 2011). Want to be a museum director? Apparently, be a man. *The uncataloged museum* blog. Retrieved February 1, 2012 from <http://uncatalogedmuseum.blogspot.com/search/label/leadership>.
- (v) In the United States the phrase “non formal learning” is rarely used. “Informal learning” is the standard phrase to refer to the kind of learning that happens in museums or actually in any non-school setting and is used in this sense throughout the article.
- (vi) Bransford, J. et al. (2000). *How people learn*. National Research Council. National Academies Press. Retrieved January 9, 2012 from http://www.nap.edu/catalog.php?record_id=9853
- (vii) Bell, P. et al. (2009). *Learning science in informal environments: people, places, and pursuits*. National Research Council. National Academies Press. Retrieved January 9, 2012 from http://www.nap.edu/catalog.php?record_id=12190
- (viii) Bell et al. p. 127.



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